

IN THE CLAIMS

Amend the claims as indicated below by the markings.

1-17. (Cancelled)

18. (Currently Amended) A method of sensing temperature through intensity modulation of a light signal using an intensity modulating and remote sensing optic fiber temperature switching immersion probe, said method comprising the steps of:

- (a) immersing the probe in a ~~liquid-container~~ container of liquid, said liquid having a temperature below a melting point of a chemical;
- (b) recording a value of an optical signal generated by transmission of the light signal through the chemical in a solid state and at room temperature;
- (c) detecting a maximum optical signal by using a mirror to reflect a light that is generated by transmission of the light signal through the chemical at its melting point and in a liquid phase, said maximum optical signal consisting of said reflected light;
- (d) using a photo-detector to detect the optical signal from the probe;
- (e) signal processing an output of the photo-detector by a signal processing circuit; and
- (f) enabling actuation of a relay dependent on the signal from the probe to at least one of stop a heating process and raise an alarm.

19. (Original) The method according to claim 18, wherein the liquid is selected from the group consisting of water, acetone, carbon tetrachloride and transformer oil.

20. (Previously Presented) The method according to claim 18, wherein the chemical is selected from the group consisting of: oxalic acid, sodium chloride, paraffin wax and acetamide.

21. (Previously Presented) The method according to claim 18, wherein the chemical has a melting point in a range of 75-85 °C.

22. (Previously Presented) The method according to claim 18, wherein optical signal propagation in the probe is secure and without any cross talk or interference problems.

23. (Previously Presented) The method according to claim 18, wherein the optical signal in the probe is unaffected by presence of electrical signals.

24. (Previously Presented) The method according to claim 18, further comprising the step of:

using the probe for remote sensing up to a distance of 1 km.

25. (Currently Presented) The method according to claim 18, wherein the probe at an increased temperature provides an increase of six times in an output signal over a signal at room temperature.

26. (Previously Presented) The method according to claim 18, wherein the chemical is opaque at room temperature and becomes transparent at a predetermined higher temperature enabling actuation of a relay to at least one of stop a heating process and raise an alarm.

27. (New) The method according to claim 18, wherein the optical signal from the probe is comprised of a focused light reflected by the mirror.

28. (New) The method according to claim 18, wherein the mirror is comprised of a concave mirror having a predetermined focal length.

29. (New) The method according to claim 28, further comprising the step of:
transmitting the light signal through a cell having a focal length twice the focal
length of the concave mirror.